

The background of the slide is a deep black space filled with numerous small, distant stars. On the left side, a portion of the Earth is visible, showing blue oceans and white cloud patterns. On the right side, a large, dark, and heavily cratered asteroid is depicted, appearing to move towards the viewer.

# ***Public Participation in the Exploration of NEOs***

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Image credit: Dan Durda



# Overview

The Planetary Society has 30 years experience engaging public in space exploration.

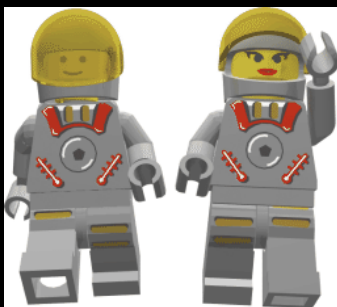
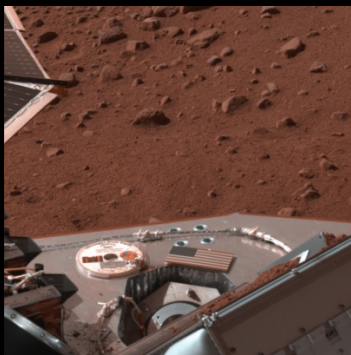
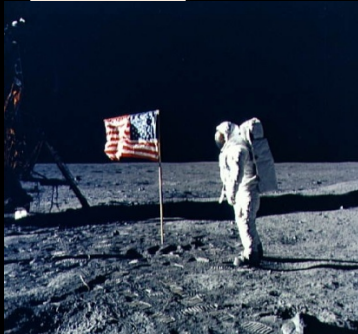
Tried a lot of things. Lessons learned:

- Use a range of involvement levels: hit all levels from simple with lots of people, to in-depth with few (who communicate).
- Those who invest time in involvement tools, even if simple, feel greater interest to follow missions through other avenues, they feel “ownership”.
- Competitions engage far more than just the competitors.
- Much opportunity for international involvement.
- NEO missions will be great opportunities for public outreach: new human aspects, planetary defense, imagery.

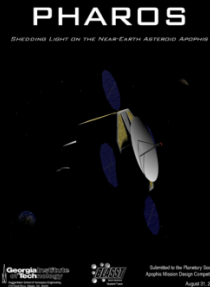
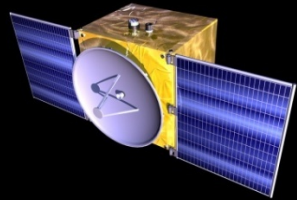
Huge numbers of people taking in public information, media reports, responding to key events in particular. Drives involvement in higher levels of pyramid.



## Examples



- **Billions of people:** press coverage, video/pictures/audio. Important for breadth of engagement and to move some to next levels.
- **Millions:** Engagement that takes little of their time, but involves them, e.g., names and wishes on spacecraft (e.g., MER, Phoenix, Hayabusa, etc.)
- **Hundreds of thousands to millions:** social media, either allowing peer-to-peer interaction, e.g., Facebook, or facilitating direct communication from astronauts (and robots?), e.g., Twitter.
- **Tens of thousands to millions:** public participation in science (e.g., SETI@Home, Stardust@Home)
- **Tens of thousands:** “Simple competitions” from naming (s/c, asteroids like (e.g., Magellan, Braille, etc.), to guessing parameters (e.g., Deep Impact crater diameter).



- **Thousands to tens of thousands:** More in depth competitions vying to be involved with mission ops: a handful win, e.g., Red Rover Goes to Mars with MER.
- **Thousands to tens of thousands:** Other in depth competitions, e.g., essay, video, etc. Great for engaging lots of students.
- **Hundreds to thousands:** Design competitions to engage professionals, amateurs, university classes, e.g., Apophis Mission Design Competition.
- **Tens:** winners of broader in-depth competitions engaged meaningfully as surrogates for public, e.g., driving microrover, communicate their experiences to much larger segment of public (e.g., RRGTM).
- **Tens:** With NEOs can also engage amateur astronomy community (e.g., Shoemaker NEO Grant Program)





# TPS Human Asteroid Design Competition



- In coming months, Planetary Society will hold an open competition to design a human mission to a near Earth asteroid.
- Will emphasize the portions of the mission when near or on the asteroid (input invited on details)
- 3 categories:
  - Open (envision aerospace companies)
  - College students (primarily design classes)
  - High school and below essay competition
- \$20K prize from Google



- Now assembling partners and advisory committee, defining details
- Doing in collaboration with NASA and other organizations and agencies
- Goals of competition
  - Large, diverse, innovative suite of entries contribute to future space agency human NEA missions
  - Educate about NEOs, and context of human NEA mission in broader context of solar system science and planetary defense
  - Popularize the idea of human asteroid mission



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